

ABSTRACT

In a thin film forming method in which a mixture gas which includes a monomer gas and an oxidizing reactive gas is plasmatized and a thin film which is formed of an oxide is formed on a surface of a substrate, the mixture gas is plasmatized while a flow amount ratio of the monomer gas with respect to the reactive gas is varied under the condition that the flow amount ratio is included within at least a specific range. In this case, a thin film forming device 10 in which high frequency electricity is supplied from a high frequency power supply section 30 to a plurality of thin film forming chambers is used. By doing this, it is possible to provide a thin film forming method and a thin film forming device in which it is possible to strictly form a thin film which has characteristics such as a gas barrier property without variation in quality and to provide flexibility to the thin film even if the thin film is formed onto a large number of substrates. Also, in a monitoring method for measuring the intensity of the hydrogen alpha rays and the intensity of the oxygen radiation rays which are radiated from the plasma while forming the thin film and comparing each intensity with a standard intensity of each radiation under the condition that the thin film has a desirable surface quality, and for determining whether or not a thin film which has a desirable surface quality is formed, a thin film forming device is provided with: an optical spectrometer 12 which measures the intensity of each radiation, a storage section which stores a standard intensity of each radiation, and a determining section which determines whether or not each measured intensity is in a specific range by comparing each measured intensity with the standard intensity of each radiation. By doing this, it is possible to determine whether or not the produced thin film has a desirable surface quality during the process.